

THE TYPIFICATION OF THE GENUS *FORESTIERA* (OLEACEAE)

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Forestiera Poiret, a small oleaceous genus of approximately twenty species, has had a surprising number of papers published dealing with the typification of its generic name but the matter still seems unresolved. Shinnars (1959) suggested that the difference between his conclusion as to the proper typification of the generic name and that of Wilson (1958), who was supposedly correcting Johnston (1957), was "hardly anything but a bit of pedantic quibbling." Still, if one intends to be pedantic, one at least ought to be correct.

The lectotypification of generic names originally published without accompanying binomials is not explicitly covered by the ICBN and consequently the problem has been treated by different authors in a variety of ways. Generic names of this type sometimes have been lectotypified either by choosing from among the first binomials assigned to the genus or by that species most strongly indicated by the generic protologue or by interpretation and eventual identification of the specimens available to the author. This diversity in approach to generic typification does not augur well for stability. *Forestiera* is such a case and the conflicting approaches to typification and the resultant confusion in stated types is due at least in part to the different approaches to typification mentioned above.

The first effort at lectotypification was by Britton and Brown (1913) who chose *Forestiera acuminata* (Michx.) Poiret, one of the original species assigned to the genus *Adelia* P. Browne which is the rejected name upon which *Forestiera* is ultimately based. Johnston (1957) stated that *Adelia porulosa* Michx. should be the type species of *Adelia* P. Br. and hence of *Forestiera* Poiret. In contrast Wilson (1958) stated that the type of *Forestiera* should be *Borya cassinoides* Willd., the first binomial explicitly applied to the Jamaican plants upon which P. Browne based the original description of the generic name upon which *Forestiera* was based. Shinnars (1959) rejected Wilson's reasonings and argued that the type must be chosen from among the three species originally named by Michaux since *Forestiera* was based not upon *Adelia* P. Br. but upon "*Adelia*

Michx." Shinnery's lectotypic species was the same as Johnston's but they reached the same conclusion by different byways.

Britton and Brown (1913) were the first to designate a type for the genus *Forestiera* and their choice was *F. acuminata*; Rehder (1949) accepted this choice. No explanation was given by Britton and Brown for this specific selection. It probably was chosen as implied by Johnston (1957), "merely on the grounds that it was the only one of Michaux's three species which was illustrated." Practitioners of the American Code (1907) were directed by their Canon 15b that "A figured species is to be selected [as the generic type] rather than an unfigured species in the same work" and the introduction of Britton and Brown's Illustrated Flora quotes these provisions approvingly and extensively. However selections made under these provisions are considered arbitrary by Article 8 of the ICBN and may be superseded.

Johnston (1957) indicated that it "seems clear that *Adelia porulosa* Michx. should be the type species of *Adelia* P. Br. (and thus of *Forestiera* Poir.)...". This conclusion seems to rest upon Johnston's apparently erroneous statement that *Borya cassinoides* Willd. was based partly on Patrick Browne's Jamaican reference and partly on a "Michaux" specimen in Richard's herbarium "from 'maritimis Floridae' upon which Richard based the *Adelia porulosa* of Michaux's Flora." If Johnston were correct, then *Borya cassinoides* Willd. would be a synonym of *Adelia porulosa* Michx. (Article 63.2) and Johnston's conclusion as to the proper lectotype would appear unassailable. Willdenow (1806) stated that the habitat of *Borya cassinoides* Willd. was "in Antillis." There hence seems to be no apparent reason to conclude that *Adelia porulosa* Michx. and *Borya cassinoides* Willd. were based upon the same type and therefore were homotypic synonyms.

Wilson (1958) argued that the type of *Adelia* P. Br., and hence of *Borya* Willd. and *Forestiera* Poiret, was the Jamaican species described by P. Browne (1756) but first provided with a binomial by Willdenow (1806) as *Borya cassinoides* Willd.

Shinnery (1959) published "as an illustration of the pitfalls that surround our modern efforts to graft a type method onto the work of botanists who had no conception of such, reasons for rejecting Wilson's choice." He pointed out that Poiret had established the genus *Forestiera* as a necessary substitution for the oleaceous plant. Poiret found this necessary for the oleaceous genus since the

later *Adelia* L. was a euphorbiaceous plant and Willdenow's substitute name *Borya* was a later homonym of an Australian genus in the Liliaceae. Poiret also stated that the oleaceous genus was established by Michaux, under the name *Adelia*. Shinnars then concluded that since both *Borya* Willd. and *Forestiera* Poir. were based upon the genus he alleged was Michaux's, the lectotype must be one of the three species included by Michaux. Shinnars chose *Adelia porulosa* Michx. as the "type" since it was the species most like the Jamaican plant described by Browne. If Michaux actually were the author of a newly published genus *Adelia* as claimed by Shinnars, there would be no reason that the lectotype of Michaux's genus should be the species most like Browne's Jamaican plant.

The card in *Index Genericorum*, apparently published in 1962, lists *F. acuminata* (Michx.) Poiret as the lectotype of the genus while Hardin (1974) stated that "Shinnars (1959) has determined *F. porulosa* as the correct type of the genus."

Patrick Browne (1756) first published the generic name *Adelia* for a Jamaican oleaceous plant but provided only a polynomial as was his custom rather than a binomial. Linnaeus (1759) employed the name *Adelia* for his newly differentiated euphorbiaceous genus. Linnaeus' genus has been wisely conserved by the ICBN as this usage has been adopted by almost all botanists in the Linnaean sense for the small neotropical euphorbiaceous genus while apparently only Otto Kuntze has attempted to restrict the name to Browne's original sense for an oleaceous plant.

Michaux (1803) did adopt the generic name *Adelia*, attributing it to "Brown" and described three species: *A. porulosa* Michx. "Hab. in maritimis Floridae," *A. ligustrina* Michx. "Hab. in fruticetis Illinoensibus, Tennasee, &c" and *A. acuminata* "Hab. and ripas fluviorum Carolinae et Georgiae." The last of these binomials was accompanied by a full page plate.

Willdenow (1806) published the generic name *Borya* (Sp. Pl. 4: 711.) as a substitute for "*Adelia* Michaux" doubtless because the latter name was used by him (Sp. Pl. 4: 867.) in the Linnaean sense for the euphorbiaceous genus although this explanation was not stated. Three of the four species included by Willdenow were those first published by Michaux: *Borya porulosa* (Michx.) Willd., *B. ligustrina* (Michx.) Willd., and *B. acuminata* (Michx.) Willd. All three rested completely upon Michaux's account. The fourth, *Borya cassinoides* Willd., was based upon Browne's polynomial diagnosis

of the Jamaican species together with its accompanying illustration and also upon a specimen seen in Richard's herbarium which reportedly came from the Antilles.

Poiret (1810 & 1812), finding that *Borya* Willd. (1806) was a later homonym of *Borya* Labill. (1804) and that the later *Borya* had been substituted as most authors had accepted the euphorbiaceous *Adelia* L. (1759) rather than the oleaceous *Adelia* Browne (1756), renamed the genus *Forestiera*. Later Poiret (1812) treated the four species included by Willdenow providing the proper binomial combinations.

Certainly there can be no argument that the type of Browne's *Adelia* must be the sole Jamaican species first given the binomial *Borya cassinoides* Willd. and later the combination *Forestiera cassinoides* (Willd.) Poiret. It was not the first species however to be given a binomial under the oleaceous *Adelia*; Linnaeus (1759) had of course provided binomials for the euphorbiaceous *Adelia*. Michaux (1803) provided the first three binomials in the oleaceous *Adelia*; he made no claim of publishing a new genus but attributed the genus to "Brown." Both Willdenow (1806) and Poiret (1810 & 1812), however, possibly attributed the generic name to Michaux as reference was prominently made to Michaux's treatment and only incidentally as synonyms within the species treatment to Browne's original publication. Still, I do not believe the evidence is present to claim, as did Shinnars, that "Michaux had in reality taken the genus over from Browne, whom he cited as author; we might list the former's version as *Adelia* Browne emend. Michaux." The demonstrable fact is that Michaux accepted Patrick Browne's genus *Adelia*, attributed the genus to him (although as "Brown"), and described three species—one of which (*A. porulosa* Michx.) is considered by recent students of the group to be conspecific with Browne's Jamaican plant. Willdenow cited "*Adelia* Mich. amer. 2. p. 223" in synonymy under *Borya* Willd. but, since he had under Dioecia Monadelphia (Sp. Pl. 4: 867) treated *Adelia* L., it would seem reasonable to consider this as a reference to Michaux's treatment which was by far the most extensive and original treatment published about the group. Poiret (Encycl. Meth. Bot. 1: 152 [132] 1810) in treating *Adelia* L. pointed out that the earlier *Adelia* P. Br. should be sought under *Borya* Willd. and would be treated by Poiret under *Forestiera*. Shinnars' claim that Poiret "stated unequivocally that his *Forestiera* was a renaming of *Adelia*

as treated by Michaux, not by Browne" seems to me unproven. It seems more certain that Poiret in his encyclopedic account of the plants of the world merely referred to Michaux's account which together with Willdenow's were the most extensive treatments of the group. Poiret was not intentionally providing a complete bibliography or a nomenclator of the group; there is no reason to believe that Poiret or Willdenow considered Michaux to be the author of *Adelia* in the strict bibliographic sense. It therefore does not follow as concluded by Shinnars that "the type species of *Forestiera* Poiret must be selected from those included by Michaux." It surely would be a mistake for us to interpret the bibliographic references of such authors as Willdenow and Poiret by the bibliographic standards of today. There never was a genus *Adelia* Michx. and the references of Willdenow and Poiret to Michaux neither established such a genus nor altered the fact that their references indirectly do refer to Browne, the sole author of the oleaceous *Adelia*.

Article 7.9 of the ICBN states that "A new name published as an avowed substitute (*nomen novum*) for an older name is typified by the type of the older name."

It seems certain that Willdenow's *Borya* was a new name published as a substitute for Browne's *Adelia* and hence is typified by the Jamaican species originally provided with a polynomial, and first given a binomial as *Borya cassinoides* Willd. It also seems apparent that Poiret, finding that the Linnaean *Adelia* was generally employed for the euphorbiaceous genus and that *Borya* Willd. was a later homonym, offered *Forestiera* as a new name as a substitute. Consequently *Forestiera* Poiret and *Borya* Willd. would have the same type as *Adelia* P. Br.——*ie.* *Borya cassinoides* Willd. or *Forestiera cassinoides* (Willd.) Poiret. The conclusion reached here is in full accord with that reached by Wilson (1958) and repeated by Wilson and Wood (1959) but differs from that reached by Rehder (1949), Johnston (1957), Shinnars (1959) and Index Genericorum (1962). According to the most recent synopsis of the genus by Johnston (1957), both *Forestiera cassinoides* (Willd.) Poiret and *F. porulosa* (Michx.) Poiret are synonyms of *Forestiera segregata* (Jacq.) Krug & Urban, a species reportedly ranging from coastal Georgia through Florida and into the West Indies including Jamaica.

It would seem that no universally applicable regulations can be drawn from this case to serve as a guide for the proper typification

of genera first described without included, named species. There seems to be no substitute for careful study of the generic protologue and for a full understanding of the nomenclatural history of the group in choosing a lectotype. Typification based upon the first binomial published under the generic name subsequent to its original publication would appear arbitrary and in any event would seem insensitive to the essential aim of reflecting the intent of the protologue when this is discernible.

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